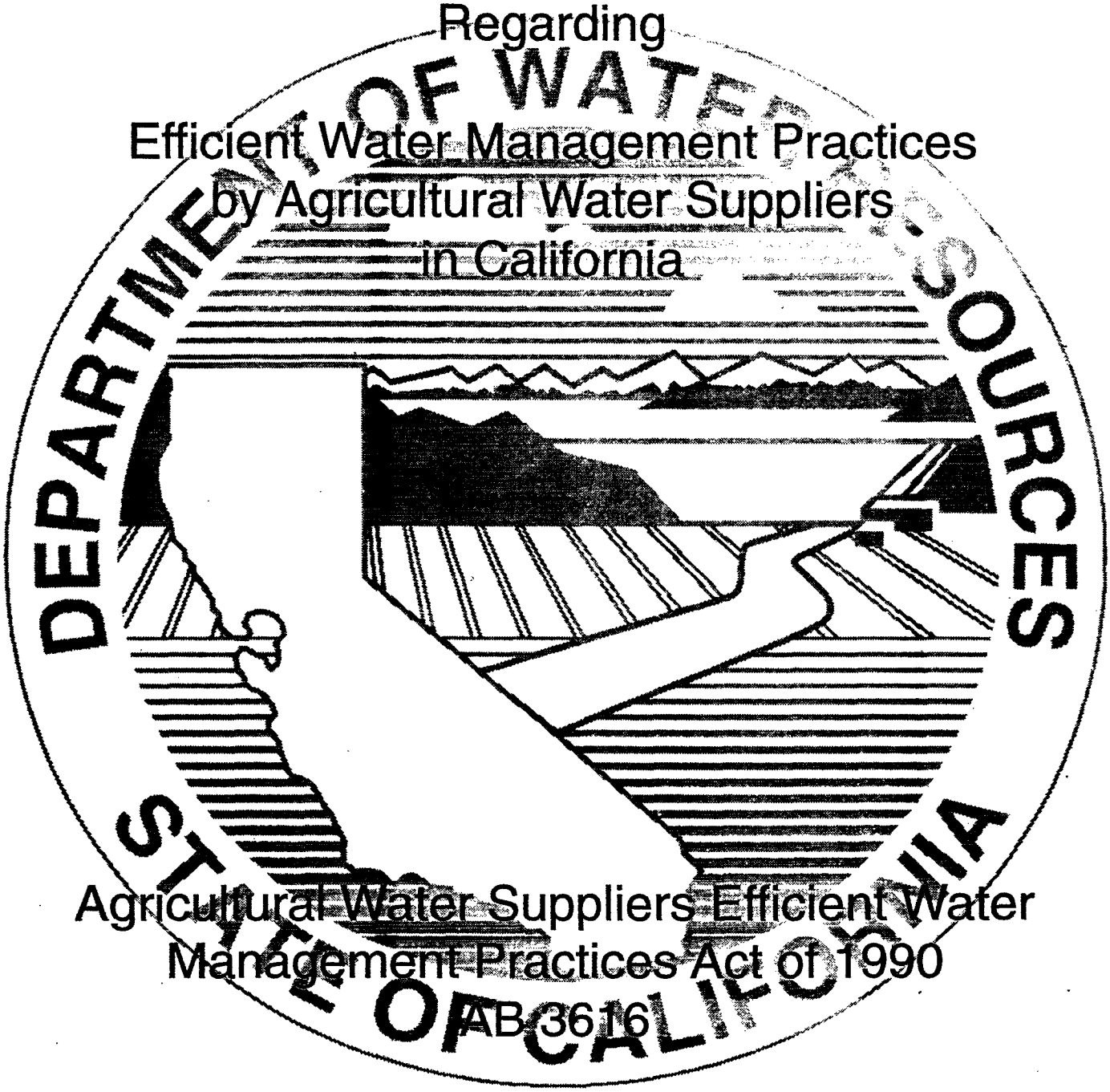
Memorandum of Understanding Regarding Efficient Water Management Practices by Agricultural Water Suppliers in California



Agricultural Water Suppliers Efficient Water Management Practices Act of 1990 AB 3616

November 13, 1996

EXHIBIT A

LIST A

GENERALLY APPLICABLE EFFICIENT WATER MANAGEMENT PRACTICES

(REQUIRED OF ALL SIGNATORY WATER SUPPLIERS PURSUANT TO SIGNING OF THE MOU)

The following EWMPs, not subject to net benefit analysis, will be implemented in a timely manner indicated below by the signatory water suppliers.

1. **Prepare and adopt a Water Management Plan using as a guideline Exhibit B of this Memorandum of Understanding for Agricultural Water Suppliers.**

   Schedule: Within two years

2. **Designate a Water Conservation Coordinator.**

   Schedule: Within three months

   Designate a water conservation coordinator to develop and implement the water management plan and Progress Reports.

3. **Support the availability of water management services to water users.**

   Schedule: Within two years

   Develop and conduct individual programs or cooperate with other water suppliers in regional programs. Some water suppliers may want to contract or arrange program delivery through consulting firms, Cooperative Extension, or others. The services may include, but are not limited to:

   a. On-farm irrigation and drainage system evaluation (e.g., mobile labs to help optimize irrigation efficiency and distribution uniformity).

   b. Normal year and real-time irrigation scheduling and crop evapotranspiration information (e.g., CIMIS data, crop coefficients).

   c. Surface water, groundwater, and drainage water quality data.

d. Educational programs and materials for farmers, staff, and public (e.g., soil moisture and salinity monitoring, in-school awareness programs, Agwater software, efficient irrigation techniques, crop water budget and other approaches, program delivery via workshops, seminars, newsletters, field days and demonstrations, etc.).

e. Water user pump testing and evaluation.

4. **Where appropriate, improve communication and cooperation among water suppliers, water users, and other agencies.**

Schedule: Within one year

5. **Evaluate the need, if any, for changes in policies of the institutions to which the water supplier is subject.**

Schedule: Ongoing

Evaluate the policies of agencies that supply the water supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage. Initiate necessary modifications as practicable.

6. **Evaluate and improve efficiencies of water suppliers' pumps.**

Schedule: Initiate within one year and test all pumps every two years thereafter, if in use.

Many water suppliers operate booster pumps or groundwater pumps as part of their delivery facilities. Where water measurement is based on electrical meter observations, pumps should be tested regularly for accuracy of flows. A program to evaluate and improve the efficiencies of such pumps may result in energy savings or peak load reductions, or reveal capacity limitations due to inefficient facilities. Over the long term, the water supplier may be able to reduce operational costs and improve operational efficiency.

LIST B

CONDITIONALLY APPLICABLE EFFICIENT WATER MANAGEMENT PRACTICES

(PRACTICES SUBJECT TO NET BENEFIT ANALYSIS IN ACCORDANCE WITH EXHIBIT E - PURSUANT TO ENDORSEMENT OF THE WMP)

1. **Facilitate Alternative Land Use.**

   Schedule: Ongoing as request and need arise

   Facilitate voluntary compensated alternative use of lands, where appropriate, to assist in the control of problem drainage.

2. **Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils.**

   Schedule: Initiate within three years

   The use of recycled urban wastewater for irrigation provides an opportunity for reuse of an available water supply. Reuse of urban wastewater can be an important element in overall water management.

3. **Facilitate the financing of capital improvements for on-farm irrigation systems.**

   Schedule: Initiate within five years

   Financial aid to farmers may include cataloging available funding sources and procedures and/or obtaining funding, administering the program, and providing low-interest loans.

4. **Facilitate voluntary water transfers that do not unreasonably affect the water user, water supplier, the environment, or third parties.**

   Schedule: Ongoing as request and need arise

   Water suppliers may facilitate water transfers within the framework of the law, giving appropriate consideration to environmental and third party impacts.

5. **Line or pipe ditches and canals.**

Schedule: Initiate within five years

Undesirable seepage and evaporation losses in ditches, canals, and reservoirs may be reduced by replacement with pipelines or lining with bentonitic clay, concrete, or plastics/textile membranes. Consideration must be given to identifying potential wildlife impacts, loss or gain of farmable acreage, and contributions of seepage to conjunctive use and/or groundwater recharge programs before implementation. Seepage may be desirable for groundwater recharge or environmental benefits.

6. **Increase flexibility in water ordering by, and delivery to, the water users within operational limits.**

Schedule: Initiate within five years

Provide water users with the flexibility to: (1) receive water deliveries when it is time to irrigate; (2) apply the appropriate volume at the appropriate flow rate; (3) terminate water delivery when the irrigation is complete.

7. **Construct and operate water supplier spill and tailwater recovery systems.**

Schedule: Initiate within three years

Construction of water suppliers' spill recovery systems may increase efficiency or, in some cases, reduce losses of water from operational spills. In some areas, interception and recovery of farm tailwater may be advantageous. However, consideration must be given to the impacts of such activities on water quality, crop yields, soil salinity and other conditions, third parties, and the environment.

8. **Optimize conjunctive use of surface and groundwater.**

Schedule: Initiate within five years

Conjunctive use programs, widely practiced throughout California, make use of the storage capacity of groundwater aquifers to allow the redistribution of water from when and where it is available to when and where it is needed. Water suppliers will investigate and implement possible improvements in conjunctive use programs. Wherever possible, during wet years conjunctive use programs should attempt to use surplus water from within or outside the basin for the recharge of groundwater supplies or to reduce the use of those supplies.

9. Automate canal structures.

Schedule: Initiate within five years

Automation of canal structures may increase flexibility in water deliveries and increase the water supplier's control over its water supplies, thereby providing the opportunity to improve the efficiency of water use.

LIST C

OTHER EFFICIENT WATER MANAGEMENT PRACTICES

(PRACTICES SUBJECT TO DETAILED NET BENEFIT ANALYSIS IN ACCORDANCE WITH EXHIBIT E - PURSUANT TO ENDORSEMENT OF THE WMP)

1. Water Measurement and Water Use Report.

Schedule: Initiate within two years from endorsement of the WMP.

A water supplier will measure or calculate the volume of water delivered within a reasonable range of accuracy. Such measurement or calculation will be by individual water user or other reasonable measurement/calculation option. A water supplier will provide timely water use reports to water users through billings or advisories. This practice is intended to assure appropriate accounting for water uses and management.

A water supplier will include this EWMP in some form in the WMP. In order to determine the form of implementation, the water supplier will undertake a net benefit analysis pursuant to Exhibit E. The current form of implementation will suffice if the supplier demonstrates that no other form of measurement or calculation will improve net water management benefits over current practice.

2. Pricing or Other Incentives.

Schedule: Initiate within two years from endorsement of the WMP.

This practice consists of rate structures or financial incentives that promote efficient water management.

A water supplier will include this EWMP in some form in the WMP. In order to determine the form of implementation, the water supplier will undertake a net benefit analysis pursuant to Exhibit E. The current form of implementation will suffice if the net benefit analysis shows that no other form of pricing and incentives will improve net water management benefits over current practice.

Examples of forms of pricing or other incentives that would satisfy this EWMP include, but are not limited to, the following:

a. A water supplier may implement a water rate structure which is volumetric, in whole or in part.

b. A volumetric rate structure may be tiered, whereby the water supplier sets a higher price for that portion of water applied above crop evapotranspiration, leaching requirement, system evaporation, and other beneficial requirements. This practice penalizes growers who waste water. In areas of overdraft, caution must be used to prevent substitution of groundwater pumping as a result of this practice, unless such substitution is a stated purpose of the practice.

c. A water supplier may implement a pricing arrangement or other financial incentives to improve the conjunctive use of surface and groundwater supplies. For example, in dry years the water suppliers may encourage, through higher prices for surface water, pumping more groundwater and leaving surface water for other beneficial uses such as environmental benefits. Conversely, in wet years pricing may be used to encourage greater use of surface water to facilitate recharge.

d. Water suppliers may initiate or facilitate low-interest rate loans to water users for the purpose of improving on-farm irrigation efficiencies by use of gated pipes, pressurized systems, pipelines, lined ditches, etc.

e. A water supplier may provide cooperative funding for on-farm technical irrigation management assistance, such as private consultants.

f. A water supplier may facilitate marketing and transferring of water among water users. This may provide necessary financial incentives and may improve water use efficiency.